Sample Locations, Parameters, and Frequencies To Characterize Municipal Dischargers' Influent Wastewater and Plant Performance for the Interim Optimization Plan and Basis of Design Report

The following table is intended as a guide to an acceptable wastewater characterization study for the purposes of the Interim Optimization Plan (IOP) and Basis of Design (BoD) reports required in VPDES permits. Deviations from this guide may be proposed with justification.

Sample Identification	Sample Type	Location or Description	Parameters*	Minimum Frequency
Influent	24 HC	**Flow weighted composite sample of influent	Flow, COD, soluble COD, BOD_5, soluble BOD_5, Ortho-P, TP, TSS, Ammonia, TKN, SKN, Nitrite, Nitrate, Alkalinity*, pH*, Temp.*, D.O*	8 samples minimum; sample timing should be selected to address range of influent conditions at facility
Process	24 HC	***Flow weighted composite sample from secondary treatment process effluent (after clarification)	COD, soluble COD, BOD_5, soluble BOD_5, Ortho-P, TP, TSS, Ammonia, TKN, SKN, Nitrite, Nitrate, Alkalinity*, pH*, recycle/return rates	Collect in conjunction with influent samples
Effluent	8-24 HC as required by VPDES permit	Composite sample from approved effluent point	VPDES permit required analyses (include the average daily flow rate (MGD) during each composite sample day)	VPDES permit
Sidestream process return(s)	Hourly composite when in operation	Collect sample(s) from all plant sidestream sources entering the treatment process	BOD_5, TSS, TKN, Nitrate/Nitrite, TP Alkalinity, pH*, D.O.* (include volume of sidestream flows and frequency of operation)	Two complete cycle run(s) under normal operating conditions

* indicates grab samples

** influent samples may be collected before or after preliminary and primary treatment depending on the potential for the preliminary and primary processes to remain online

*** operational data such as MLSS, MLVSS, sludge age, return rate, waste rate, secondary unit D.O., and SVI, should be documented during the sampling period. See the IOP guidance at http://www.deq.virginia.gov/tptp/pdf/iopdescr.pdf for more detail.

- *Existing data may be substituted when available*.
- *Nutrient concentrations from industrial discharges and other intermittent contributors such as septage and leachate should be evaluated.*
- *The impact of Inflow/Infiltration, seasonal variations and wet/dry weather conditions upon nutrient loadings and plant performance should be evaluated*.
- *This matrix represents a minimum amount of sampling to satisfy DEQ requirements. Deviations from these minimum requirements will be evaluated on a case by case basis with justification. Additional sampling may be needed in order to adequately characterize the waste stream. Ultimately it is the permittee's responsibility to adequately characterize the waste stream so that a viable process design can be developed.*